#### **CLAIMS:**

- 1. An imaging apparatus, comprising:
- a first substrate:
- a second substrate;
- a first imaging device mounted on the first substrate;
- a second imaging device mounted on the second substrate; and
- a glass tie bar having a first portion of the tie bar attached to the first substrate, and having a second portion of the tie bar attached to the second substrate.
- 2. The imaging apparatus of **claim 1**, wherein the first and second portions of the tie bar are attached to the first and second substrates by an adhesive cured by a mechanism other than heat.
- 3. The imaging apparatus of **claim 1**, wherein the first and second portions of the tie bar are attached to the first and second substrates by a light-curable adhesive.
- 4. The imaging apparatus of **claim 3**, wherein the light-curable adhesive is an ultraviolet light curable adhesive.
- 5. The imaging apparatus of **claim 1**, wherein the tie bar is formed of a glass having a coefficient of thermal expansion substantially similar to the coefficient of thermal expansion of the first and second imaging devices.
- 6. The imaging apparatus of **claim 5**, wherein the first and second portions of the tie bar are attached to the first and second substrates by a light-curable adhesive.

# 7. The imaging apparatus of **claim 6**, wherein:

the first and second imaging devices comprise semiconductor imaging chips;

the tie bar is formed of a glass having a coefficient of thermal expansion of approximately 3.25 parts per million per degree Celsius.

#### 8. The imaging apparatus of **claim 5**, wherein:

the first imaging device extends beyond one edge of the first substrate; and

the second imaging device extends beyond one edge of the second substrate;

the first and second substrates are arranged so that the first and second imaging devices are proximate one another.

9. An imaging apparatus, comprising:

a first imaging subarray comprising a first printed wiring board having a joining end and a plurality of first semiconductor imaging chips mounted on the first printed wiring board, including a first end chip, wherein a portion of the first end chip projects beyond the joining end of the first printed wiring board;

a second imaging subarray comprising a second printed wiring board having a joining end, and a plurality of second semiconductor imaging chips mounted on the second printed wiring board, including a second end chip, wherein a portion of the second end chip projects beyond the joining end of the second printed wiring board; and

a glass tie bar connecting the first and second imaging subarrays, wherein:

a first portion of the tie bar is attached to the first printed wiring board with a light-curable adhesive; and

a second portion of the tie bar is attached to the second printed wiring board with a light-curable adhesive.

- 10. The imaging apparatus of **claim 9**, wherein the first and second imaging subarrays are positioned so that the end chip of the first imaging subarray is adjacent the end chip of the second imaging subarray.
- 11. The imaging apparatus of **claim 10**, additionally comprising a second glass tie bar connecting the first and second imaging subarrays, wherein:

a first portion of the second tie bar is attached to the first printed wiring board with a light-curable adhesive; and

a second portion of the second tie bar is attached to the second printed wiring board with a light-curable adhesive.

## 12. The imaging apparatus of **claim 11**, wherein:

the first imaging chips are linearly aligned with one another on the first printed wiring board;

the second imaging chips are linearly aligned with one another on the second printed wiring board; and

the first and second imaging subarrays are positioned so that the first and second imaging chips are linearly aligned with one another.

### 13. The imaging apparatus of **claim 12** wherein:

the end chip of the first semiconductor imaging chip projects approximately 0.015 inch beyond the joining end of the first printed wiring board; and

the second semiconductor imaging chip projects approximately 0.015 inch beyond the joining end of the second printed wiring board.

- 14. The imaging apparatus of **claim 13** wherein the tie bar is formed of glass having coefficient of thermal expansion substantially similar to the coefficient of thermal expansion of the first and second chips.
- 15. The imaging apparatus of **claim 13** wherein the glass has a coefficient of thermal expansion of approximately 3.25 parts per million per degree Celsius.
- 16. The imaging apparatus of **claim 11** wherein the glass tie bar is substantially transparent to the light appropriate for curing the light-curable adhesive.

17. A method of forming an imaging apparatus, the method comprising:

forming a first imaging subarray comprising a first printed wiring board having a joining end and a plurality of first semiconductor imaging chips mounted on the first printed wiring board, including a first end chip, wherein a portion of the first end chip projects beyond the joining end of the first printed wiring board;

forming a second imaging subarray comprising a second printed wiring board having a joining end and a plurality of second semiconductor imaging chips mounted on the second printed wiring board, including a second end chip, wherein a portion of the second end chip projects beyond the joining end of the second printed wiring board;

bringing the first imaging subarray into proximity with the second imaging subarray so that the first end chip is immediately adjacent the second end chip;

applying light-curable adhesive to the first printed wiring board and to the second printed wiring board;

placing a glass tie bar so that a first portion of the tie bar contacts the light-curable adhesive on the first printed wiring board, and a second portion of the tie bar contacts the light-curable adhesive on the second printed wiring board; and

directing light onto the light-curable adhesive to cure the light-curable adhesive.

18. The method of **claim 17**, wherein the step of directing light onto the light-curable adhesive comprises directing light through the glass tie bar to the light-curable adhesive.

19. The method of **claim 17**, wherein the step of directing light onto the light-curable adhesive comprises directing ultraviolet light onto the light-curable adhesive.